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ART. CXCIV.—*Researches in Embryogeny.* By W. WILSON, Esq.

(Continued from p. 735).

THE introversion of the embryo-sac, although insisted upon as an established fact, is still not an essential part of the theory of Schleiden. It is possible that the apex of the sac might have a minute aperture immediately below the micropyle; or the pollen-tube might, by perforating the membrane, gain admission to the interior, instead of propelling the upper half of the sac, as it is stated to do, into the lower half of the membrane to form a double wrapper for the nascent embryo. And although it is considered that sufficient proof has been obtained that no such introversion takes place, and that thus the entire theory, so far as it rests on the authority of Schleiden, is considerably weakened if not altogether set aside; it is not so easy to dispose of the question whether or not the pollen-tube enters the micropyle: to deny it would be to contravene the statements of some of the most able physiologists of the time, while the most diligent investigations of my own have failed to supply the smallest reason for adopting their views.

Wydler says: — "On doit à M. R. Brown la connaissance de la route que suit le boyau pollinique depuis le stigmate,— jusque dans l'ovule même, en y entrant par son micropyle; mais c'est la que s'arrêtèrent les observations de l'illustre Anglais. Cette route indiquée par lui, fut constatée par les recherches de M. Brongniart fils, comme par celles de M. Corda."* It also appears that even Mirbel and Spach entertain a similar opinion. For my own part, I have not succeeded in tracing the pollen-tubes very much below the stigma; and perhaps the pains bestowed in this method of investigation might have well been spared, because in most cases the micropyle is so situated with respect to the placenta, that a void space must be traversed by the pollen-tube in its progress thither; or at least the pollen-tube must glide along the surface of the ovule after leaving the placenta, before it can enter the micropyle; and thus, without any very minute dissection, it should not be difficult to descry the lowest portion of the pollen-tube inserted into the micropyle, at the period immediately succeeding the fecundation of the ovule.

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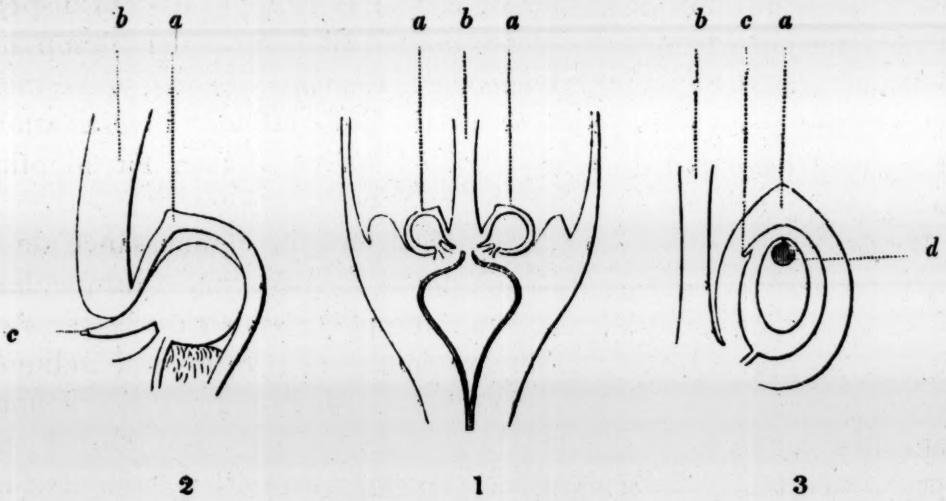
* Annales des Sciences Nat. tome xi. p. 144.

An argument which has been used with far more limited application by Mirbel and Spach, may not be irrelevant here. "Pour defendre avec succès [cet] opinion, il faudrait prouver non seulement que le boyau pollinique acquiert [souvent] une longueur démesurée, *mais encore qu'il est doué d'un sens particulier, à la faveur duquel il se dirige.*" * On the latter point, at least, it may be also said, without danger of contradicting those high authorities, — "Jusqu'à ce jour, cette preuve n'a pas été produite:" and when it is considered that in numberless cases the micropyle is not directed towards the placenta, but turned away from it, and thus placed in the most difficult and unlikely position for access on the part of an organ not endowed with intelligence, it might not be absolutely presumptuous to doubt whether these great observers may not, for once, have been misled by illusory appearances; or at least it may not be unpardonable to ask for additional evidence in support of the statement, to establish it as a general rule.



Myosotis palustris.

Fig. 1.—Longitudinal section of the base of a flower, showing two of the rudimentary nuts (*a a*) at the base of the style (*b*).

Fig. 2.—One of the rudimentary nuts more highly magnified. *a.* The pericarp. *b.* The style. *c.* The micropyle of the ovule.

Fig. 3.—A nut, half ripe, showing the altered position of the micropyle (*c*), no longer directed towards the base of the style (*b*), but in juxtaposition with the summit of the pericarp (*a*). *d.* The embryo.

The instances in which the micropyle is presented to the placenta, or rather, where it is placed in apposition with the base of the conducting tissue, are comparatively rare; but a very striking instance, perhaps even more curious than that which occurs in Statice, is presented in the plant about to be discussed.

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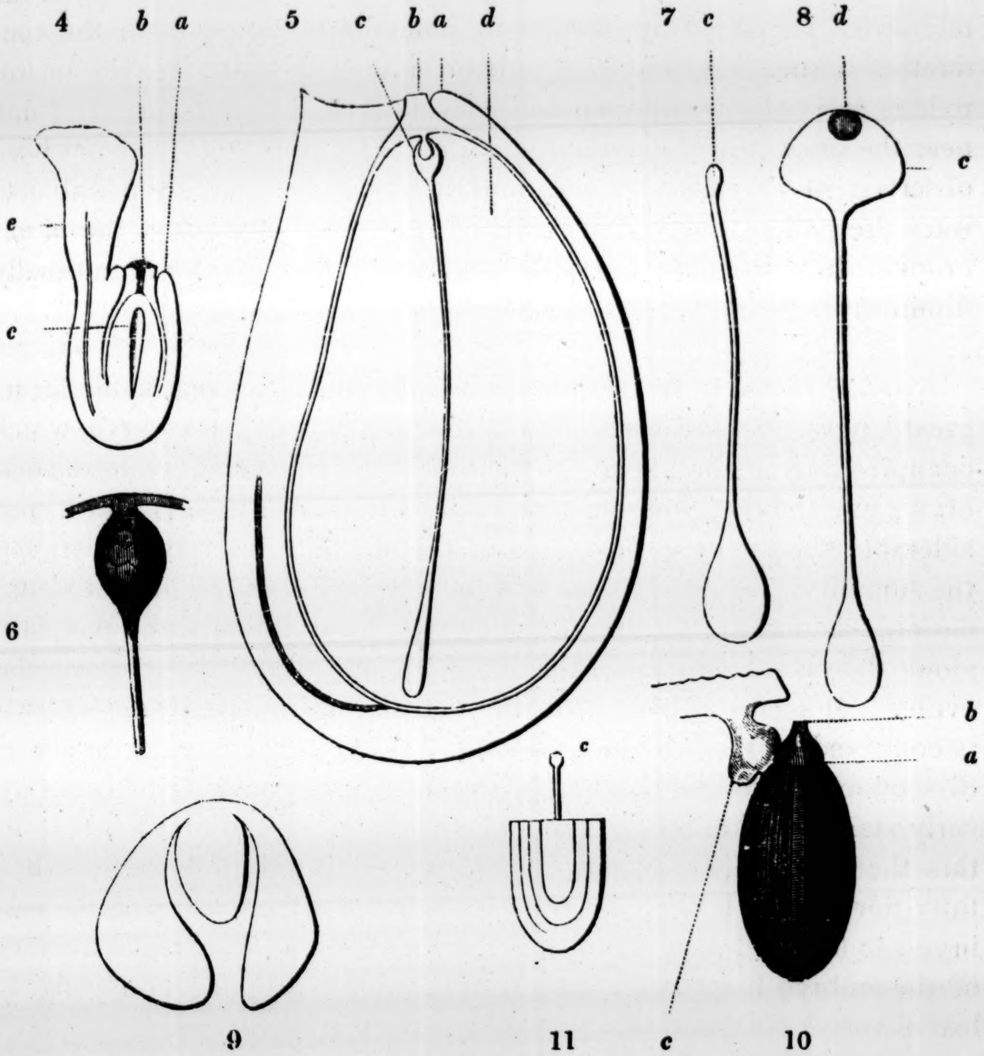
* Annales des Sciences Nat. tome xi. p. 212.



Nuphar lutea.

Fig. 4.—Section of ovule at the time of fecundation. *a.* The primine. *b.* Secundine. *c.* Embryo-sac. *e.* Funiculus.

Fig. 5.—Section of the same, in an advanced state, showing the primary utricle (*c.*) at the summit of the filiform embryo-sac. *d.* The nucleus.

Fig. 6.—Primary utricle of the last, highly magnified.

Fig. 7.—Embryo-sac removed from the surrounding parts, in an earlier stage than it is seen at fig. 5.

Fig. 8.—Embryo-sac, primary utricle (*c*), and the nascent embryo (*d*) in a more advanced stage.

Fig. 9.—Section of the embryo when nearly ripe, showing its dicotyledonous structure.

Nymphæa alba.

Fig. 10.—Ovule at the time of fecundation. *a.* Primine. *b.* Secundine. *c.* The funiculus, which afterwards develops itself into an arillus.

Fig. 11.—Section of ditto, showing the embryo-sac and the primary utricle (*c*).

Myosotis palustris. — At the time of fecundation the ovule is of a globular form, with a bent cylindrical neck, at whose extremity is the micropyle, (see fig. 1 and 2, p. 850). It has some resemblance to a chemical retort, and its neck being turned to the base of the style, the micropyle is placed apparently in immediate contact with the conducting tissue. As the ovule advances towards maturity, the micropyle is gradually withdrawn and elevated, until it is ultimately found near the summit of the ovule, (fig. 3, *c*). The embryo (*d*) has not been observed in its earliest stage, and it would be scarcely possible to trace the pollen-tube, on account of its excessive tenuity, into a micropyle thus situated: the pollen-grains of this plant are unusually diminutive.

Nuphar lutea. — In this plant the embryo-sac is remarkable for its great length, compared with that of the fully-developed embryo, which occupies only a small space at the top of the ripe seed, while the embryo-sac extends throughout its whole length. There is also a considerable thickness of the tissue of the nucleus interposed between the summit of the embryo-sac and the micropyle, at the time of fecundation, (see fig. 4); tending to show that fecundation may take place along the vascular tissue of the funiculus, and through the base of the ovule. It seems at least probable that the nutriment of the embryo is conveyed by that channel, (see fig. 5). At fig. 7 is shown an actual dissection of the embryo-sac, with the primary utricle (*c*) in a very early stage; and another, more advanced, is exhibited at fig. 8. In this the embryo (*d*) appears in its earliest intelligible state: when fully developed, it occupies the whole of the dilated head of the embryo-sac (*c*), and also assumes the same shape. The true structure of the embryo has been a subject of debate, but the section at fig. 9, leaves very little room to doubt that it is dicotyledonous.

Nymphæa alba. — In this the parts are quite analogous to the last, but with several modifications. Here the secundine projects very much beyond the primine, and the nucleus is likewise attenuated at the apex, so as almost to project beyond the micropyle. The funiculus also expands into an arillus, completely investing the ripe seed, (see fig. 10 and 11). W. WILSON.

Orford Mount, Warrington,
December 2, 1843.

ART. CXCV.—*Notes of a Botanical Excursion in France, in the Summer of* 1843. By JOSEPH WOODS, Esq., F.L.S.

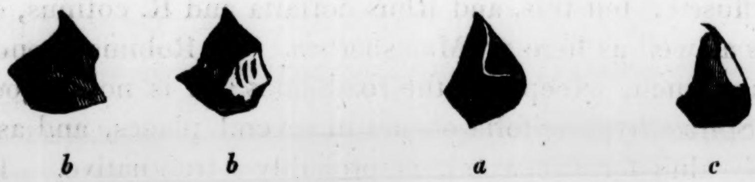
(Concluded from page 834).

I did not pursue any systematic course at Malesherbes, but made short trips as it suited M. Barnard to accompany me, to point out the localities. But I will present the results of my observations in a more regular form. I will suppose the botanist, therefore, to begin by crossing the river, and taking a road to the right, examine some rocks and sandy banks on the right bank of the valley. This was in fact the first walk I took with M. Barnard. Here he may find Osmunda regalis, a remarkable station, as the rocks in general are very dry; Asplenium viride, Tragus racemosus, and in the neighbourhood of a little spring on the upper part of the slope, Helosciadium repens, Botrychium Lunaria, and Schœnus compressus. The Helosciadium is different from any English specimens which I have seen. It has properly no stem, but throws out runners, which produce at the same points roots, leaves and umbels; yet I would not be very positive that it is specifically distinct from H. nodiflorum. On the top of the sand rocks a little beyond this spring grows Juncus capitatus; and a little higher up, on the stony ground, abundance of Epipactis atrorubens. The habit of the plant, as well as its smaller leaves and dark purple flowers, and earlier time of flowering (June), strongly indicate a specific difference from E. latifolia, of which there is abundance in the same place, but not opening its flowers until the other is quite over. We also find here Helianthemum pulverulentum, and I think apenninum, the latter of which is perhaps a white-flowered variety of H. vulgare. H. polifolium, as figured in 'English Botany,' differs in its sepals, which are rounded at the top. At this point M. Barnard left me, but we may descend into the marsh and cross it to Ronceval. The principal rarities, as is often the case with the Botany of bogs and marshes in France, consisted of plants more common in England than here: here are Carex dioica and pulicaris, and several other species are said to be found, but the marsh was everywhere full of water, and though one may go up to one's knees for the certainty of a rare plant, yet one does not like to do so for the chance of a species considered rare by the French botanists, and the additional chance that it would not be so considered by an English one. All the Carices that I did see, were in very bad condition, and it was apparently a bad year for them. Neottia spiralis is found in these marshes at a later season; and on the left hand border Malaxis Loëselii is said to grow, but I did not see it. Chlora perfoliata, which in this part of France seems always to prefer a boggy situation, also grows here; and in some of the drier parts, elevated a few inches above the general level, Inula salicina. There were also: —

Polygala amara, var. austriaca
Drosera anglica
Aspidium Thelypteris
Pinguicula vulgaris
Scirpus uniglumis
Schœnus nigricans
Sparganium natans
Utricularia minor
Ranunculus Lingua
Epipactis palustris

Before we reach Ronceval, to the left of the path through a pinewood, M. Barnard finds Lavandula vera in abundance, but I missed the spot. Scabiosa ukranica grows on some sandy banks, but not in the abundance in which we shall find it in our next walk. I gathered also Silene Otites, Orobanche ramosa, Linaria Pelesseriana and Polycnemum arvense.

From Ronceval we may again cross the marshes in a new line, and pass the Essonne, either at the bridge below the chateau, or at the Mill *du Tonneau*. In either case we direct our course to the village of Pinson, behind which, on a bank at the edge of the wood, is Medicago orbicularis. We then cross the wood by a foot-path, where I ought to have found Rhus Toxicodendron. This is probably one of the plants introduced here by M. de Malesherbes, the generous defender of Louis XVI., who amused himself with planting trees and scattering seeds in the woods about the chateau. There are, however, many plants about Malesherbes, which seem to be naturalized rather than genuine natives, but which can hardly be attributed to him. Prunus Mahaleb I should think indigenous; it abounds in the woods, not only here but at Etampes and Pithiviers: and being esteemed a good wood for fuel, it is now planted for that object; but it seems more probable that a plant, a native of the country and found useful, should be selected, than that a foreign shrub should have been sought out for that purpose. Cytisus Laburnum is almost equally common, and is considered also good fuel. This may have spread from the gardens, where it has been early and generally admitted throughout Europe, as an ornamental plant; yet I should rather suppose it wild originally, though increased to its present quantity by those who have the care of the woods. Nobody would doubt that these plants were in their natural situation if there were only one shrub where now there are a hundred; their very abundance makes them suspicious. Prunus Mahaleb I gathered in a wood near Rouen, and it occurs in the forest of Orleans. For the Laburnum we must go much further to find a position in which it is either certainly or doubtfully a native. Next to these is Syringa vulgaris, which occurs sometimes in large patches, and sometimes in scattered bushes, just as we should expect from a native plant. Colutea arborea is much less widely diffused; but this, and Rhus coriaria and R. cotinus, occur at Pithiviers as well as here at Malesherbes. Of Robinia pseud-acacia there is not much, except by the road-sides: it is not a good fire-wood. Spiræa hypericifolia occurs in several places, and as it cannot be of value for fire-wood, is probably a true native. Keeping still to this wood of Malesherbes, we find, in addition to the preceding, Cytisus supinus and sessilifolius, Tilia parvifolia and Acer monspessulanus. Our next plant is Stachys lanata, at the foot of a flight of steps leading towards the chateau: I observed also a plant or two of the same by the village of Pinson. We go up these steps, and leaving the chateau on the left, pass by a long straight avenue to the road to Orleans, which we cross, and gather Cytisus supinus, and after some distance, find on the left the wood of Chateau Gay, which we enter, and gather Buxus sempervirens, Quercus coccifera and Taxus baccata: even the latter of these is not thought genuine. Then on a hill almost detached from the general mass, abundance of Phalangium ramosum and Carthamus mitissimus occur. Here also, in some years, Orchis odoratissima abounds, but though M. Barnard was with me at this point, we hunted a long time for it in vain. The Orchises of the militaris tribe were over, but O. hircina was still in full flower, Ophrys apifera very plentiful, and O. arachnites just coming out (June 24), but when I again visited the point at a later period, (July 31), it was in great beauty: Prunella grandiflora also made much more show at this later visit. I do not mention in these walks Teucrium montanum, Ononis Columnæ, or Helianthemum Fumana, because they are almost everywhere about Malesherbes. On descending from this hill and leaving the wood, we gathered Neslia paniculata and Lactuca perennis. Here M. Barnard again left me, after having pointed out my course to the Colline de Justice. On a barren piece of ground on the way, the three species of Adonis were all growing together, which gave me an opportunity of comparing them. They are perfectly distinct, and well characterized by the seeds. In A. autumnalis (*a*) these are pyramidal, with a terminal style, and are rounded at the base. Those of A. æstivalis differ by having an unequally projecting membrane above the base, giving the appearance of a tooth to the outline, (*b*); while in A. flammea, the spike is more cylindrical, the fruit smaller and less angular, and the style below the summit, (*c*): something of the border above the base is visible here also. These characters are the more valuable, as the flowers and seeds are generally found together. But in the spring (they all flower early in June, or perhaps in May), before the seeds are sufficiently advanced, they may be distinguished, — A. autumnalis by its somewhat incurved petals of a rich deep crimson, giving rather a globular appearance to the flower; æstivalis by its full, flat, scarlet flower; and flammea by its few (3—5) and narrow petals, forming a flower neither conspicuous nor beautiful. Upon the same piece of barren ground grows Linum montanum, here quite prostrate; while on the neighbouring Colline de Justice it is erect. Other difference I could not find, except that the latter form produces its flowers for a short period only, while the former keeps throwing out its flowering-stems all through the summer. L. montanum and L. alpinum seem, however, hardly marked by any other character: L. perenne of Smith (L. anglicum of DeCandolle) is perhaps distinguished by its obtuse sepals. Here we also meet with Micropus erectus, which I afterwards found to be very common at Etampes and Pithiviers, as well as at Malesherbes; and with Althæa hirsuta.

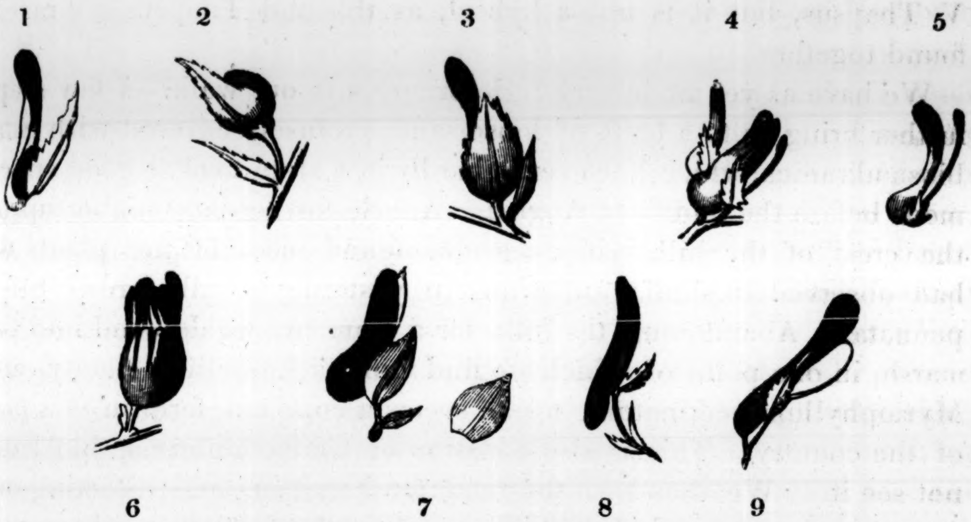


a. Seed of Adonis autumnalis. *b, b.* Seed of A. æstivalis. *c.* Seed of A. flammea.

From this barren piece I mounted the Colline de Justice, where again we find abundance of Orchideæ, Carthamus mitissimus, and Spiræa hypericifolia, together with Rosa cinnamomea, Lavandula vera, and one or two plants of Satureja montana. From this hill I crossed the plain to two or three cottages within sight, above Rouvilles, which mark the station of Rosa lutea, and where, on the 24th of June, I still found one or two straggling flowers. From thence, leaving the chateau, which lies between us and Malesherbes, on the left, we follow the line of a hedge till we have wood on the outside of the inclosure as well as within, and then crossing the hedge, which is everywhere pervious, we find Limodorum abortivum on the descent, on the stony soil above the sand.

In all this walk we have been rather circling Malesherbes, than going to any distance, and it might be divided into two, or the two last portions might be visited in our next walk.

In this we again cross the bridge, but afterwards turn to the left instead of the right. On the sandy ground here, as indeed in many other places, we find Fumaria parviflora and Vaillantii abundantly. I have not, in this excursion, seen much of the larger forms, but the four smaller seem distinctly characterized. In F. parviflora the seed ends in a blunt acumen, giving a somewhat lengthened form to the whole fruit; and though in F. officinalis and Vaillantii there is sometimes a sort of umbo, yet this rather occupies a terminal hollow than forms of itself a projection. In F. officinalis the calyx, on the first opening of the flower, is as long as the germen; in Vaillantii it is extremely small and evanescent, so much so that it is often difficult to be certain that there is any, even before the flowers are open; in micrantha, on the contrary, it is broad, more than half as long as the flower, and exceeding at all times the seed-vessel. The calyx of F. parviflora is larger than that of Vaillantii, but this, as I have already observed, is distinguished from all the others by the fruit.



1, 2, 3.—Fumaria micrantha, *Cosson*. 4, 5.—F. parviflora, Plain of Varenne. 6.—F. Vaillantii, Pithiviers. 7.—F. micrantha, Sussex. 8.—F. officinalis, Beauvais. 9.—F. officinalis, England.

Our next plant is Verbascum thapsiforme, which is also very common, but flowering rather later than many of the plants of our walk. The large flower and the lengthened lower anthers are the first things to be attended to. Cosson &c. make the character depend upon the greater proportionate length of the filaments, but I do not find this to be correct. The anther is lengthened quite as much in proportion as the filament; and it is to be observed that in V. Thapsus the two lower filaments and anthers are somewhat longer than the others, and in all the species of Verbascum where this takes place, the lengthened anther is smooth at the top, and sometimes in its whole length. Another point is in the base of the leaves, which are always so decurrent in V. Thapsus, as to form five wings to the stalk. I cannot assert that this is never the case in V. thapsiforme, but I believe it will not be found to obtain through the whole plant, and the lower leaves are sometimes so little decurrent as hardly to furnish two continued wings, bringing it near to phlomoides. It may be a variety of V. Thapsus, but it is not a hybrid, as this and Thapsus are rarely found together.

We have as yet made very little progress in our walk. A few steps further bring us to a bank of loose sand, profusely covered with Scabiosa ukranica, which however is hardly in a state to offer good specimens before the middle of August. A little further, and higher up on the crest of the hill, where we also found most of the plants we had observed in similar situations in yesterday's walk, grows Stipa pennata. Abandoning the hills for a moment, we descend into the marsh, in one point of which we find Ophrys Loëselii in plenty, and Myriophyllum pectinatum, which seems a common form in this part of the country. This is also a station of Carex filiformis, but I did not see it. We then take the road for Nanteau, and directing our course to the east end of the village, follow the carriage-road towards Bois Minard, near the beginning of which, in the sandy bottom, we find Trigonella monspeliaca and Andropogon angustifolium. The botanist may then either continue to Bois Minard, or return through Nanteau, and take the road along the valley as far as the Mill of Noigneau. I took the former course, and from Bois Minard descended through a woody valley to the Chapelle Nainvault, now a barn, and to the said Mill of Noigneau. This valley will perhaps give nothing new, yet it is pleasant to see such a number of plants together, either rare or unknown with us. The steep barren points were splendid with :—

Dianthus caryophyllus
D. prolifer
Silene Otites
Veronica spicata
Melampyrum cristatum
Helianthemum guttatum
Teucrium Chamædrys
T. montanum
Ononis Columnæ
Coronilla minima
Statice plantaginea
Sedum album
Geranium sanguineum
Stachys recta
S. annua
Allium sphærocephalum
Aira canescens
Euphorbia Cyparissias
Ononis natrix, which I ought to have mentioned before, as it grows in many places.

The white-flowered Helianthemums were over. In the lower parts we had Campanula persicifolia, Coronilla varia, Peucedanum Oreoselinum, Malva Alcea and Tilia parvifolia. I missed Scabiosa suaveolens, which is said to grow in this valley.

After passing the mill and the bridge beyond it, we cross the marshes by a path to the right, which is not always practicable. I was told that this would take me to St. Val: I do not know whether I made some mistake, and kept too much to the left, but I came out at Boigneville, the hills behind which descend in a sort of double slope, of which the highest is stony and the lower sandy. Behind the last houses of the village, on the upper part of the lower slope, Hyssopus officinalis grows in great profusion. At Boigneville are two respectable public-houses. I continued my walk to St. Val, behind which there is a range of rocky wood, where however I added nothing, and I should recommend it and some points above to the examination of another day, when the botanist has not spent his time and his labour in hunting out plants by the way: he will therefore set his face homewards, and passing the little bridge at Boigneville, ascend the rock of St. Gervais by a winding foot-path. This bridge is over a little stream, whose sources are in the marshy ground of the valley above, and there are moist places at the foot of the rocky bank a little above the level of the marsh, which seemed promising, but I found nothing. As he emerges from the rocky ascent of St. Gervais, he will find Bupleurum aristatum, which I believe is the only addition I have made to the Flora of Paris: and he will enjoy a fine view up the rocky valley of Prainvault, and down that of the Essonne. Thence keeping to the left on the edge of the hill, he will come to a carriage-road which rises from the valley. Near this he ought to find Ruta graveolens and Allium carinatum, but I failed in both, although I returned a second time to look for them. After leaving this point I took the by-road to Argerville, and turning to the right followed for some distance the valley of the Essonne to Touvault, soon after which my road ascended the hills. I left it at the top and followed the crest, which gave me again Limodorum abortivum and Bupleurum aristatum. From this point we may pass through a little hamlet, and above the chateau of Rouville, and gather Rosa lutea and Limodorum abortivum, if we have not already included them in our collections.

Many other excursions, extending to a greater distance, might doubtless be made profitably from Malesherbes, keeping among the woods and steep banks which border the valley of the Essonne; for on the flat table-land which extends on each side, there is little to be found. I went on one occasion to Boissy aux Cailles, near which, in the early spring, M. Barnard obtained Scilla bifolia and Corydalis fabacea. I found nothing; but it is curious and very delightful, after a long, dull, nearly level walk, to find one's self on the edge of a deep picturesque hollow, where rocks, woods and sandy banks are mixed with villages and cultivation. This hollow of Boissy aux Cailles forms the head of a separate valley, watered lower down by the little river l'Ecolle, which falls into the Seine at Ponthievy. The eye follows it as far as Milly, where some pretty high hills, probably calcareous, rise above the sandy banks. To judge from this view, and from the figure it makes on the map, there is no situation about Paris which promises a better harvest than Milly, and as we find no habitats assigned, I conclude that none has been so little visited.

Whatever we may think of the Botany of Malesherbes, the tendency it exhibits to admit a foreign vegetation is very curious. Of the various plants which have been sown in different places in our country, for amusement, for experiment, or with the fallacious and foolish view of swelling out the numbers of a local Flora, we know that very few have succeeded; but here everything seems to take root.

On the 26th of June I found a voiture at Malesherbes, which took me to Lardi, whence I went by the rail-road to Etampes. Our road followed the valley of the Essonne (after the first three or four miles) as far as Ferté l'Aieps, and the whole is very tempting; but on another occasion (July) I visited Pithiviers, which perhaps is more different in its character from Malesherbes than Maisse, la Ferté, or any place in the lower valley of the Essonne. The grit and sand here disappear, and we have only a few calcareous rocks and slopes of trifling elevation arising from the valley. Pithiviers would afford two long walks, one up and one down the valley, in each case going on one side and returning on the other. Many of the rarities of Malesherbes are here plentiful; as Linum montanum, the erect variety, Teucrium montanum, Ononis Columnæ, Micropus erectus and Althæa hirsuta. Prunus Mahaleb is extremely common, as well as several of the other shrubs of doubtful spontaneity already mentioned. In the park, a vast enclosure of fields, gardens, meadows and marshes, M. Cosson and myself gathered Lathyrus palustris. This park is open on the side towards Pithiviers, but has no exit at the further end, and its long wall forces one to a disagreeable detour on that side of the town. Below the park is a considerable marsh, somewhat peaty in places, and here also is found Lathyrus palustris, but not so plentifully as in the park. In another direction L. tuberosus grows among the corn. Towards Bonderoy, Medicago orbicularis is plentiful, and we observed Tordylium maximum and Veronica præcox.

From Etampes the walk I should most recommend is to go to the extremity of the Fauxbourg St. Pierre, and turning on the left from the road to Pithiviers, ascend a sandy slope by the side of a sand-pit.

Immediately after leaving the houses we find Tragus racemosus, and higher up Fedia coronata. Crossing the ridge, and a cultivated valley, we reach a second woody bluff where Helianthemum Fumana (or procumbens) is exceedingly abundant. Proceeding in the same manner we mount a third woody point, after passing in the bottom the road to la Ferté, which is characterized by the size and abundance of Ononis Columnæ, and on the top by the quantity of Micropus erectus and of Orchideæ, for which however I was too late, except for Satyrium hircinum and an Epipactis.

The Micropus is nearly wanting on the two first hills. The upper part of the fourth point offers us Carthamus mitissimus, and on its foot, in a sandy wood which descends into the plain, an Orobanche, which some of my botanical friends thought to be O. arenaria. On examining it more at leisure, and comparing it with a specimen of O. arenaria from Montpellier, it appears to me a variety of O. cærulea, with blunter divisions to the lower lip, and the upper toothed, but nearly entire. I did not go any further, but there are three other points of the same nature well worth an examination, and we might then walk to Etrechy, two leagues from Etampes, and return by the rail-road. The only interesting plants I have seen at Etampes, not included in this walk, are Teucrium montanum, Linum montanum and Trigonella monspeliaca; and I should think it probable that a further investigation would yield these also. The two first seem to prefer a calcareous soil, and would be found in a walk begun by crossing the marshes of the Juine by a foot-path, and keeping among the woods to the right. I did not go far in this direction, and about Ormoy la Rivière, the hills do not appear interesting. Further up the valley they are again more promising. Just beyond the first hollow, opposite to a mill before reaching Ormoy, are some banks which seem exceedingly rich in Orchideæ; and if Orchis variegata had got into the Norman Flora by anything but a mistake, I should expect to find it here. There are some barren slopes stretching from Briere les Scellées towards Champigny, which will yield Trigonella monspeliaca, and perhaps something else; at the foot I observed Arnoseris minima: I passed along it in the rain. In the fields at the top I noticed the Polycnemum, and above St. Martin de la Roche, Trifolium glomeratum, which is considered a prize by the Parisian botanists. At St. Martin is Leonurus Cardiaca, but I did not see the L. Marrubiastrum, said to be found near Etampes. At St. Hilaire, Carthamus mitissimus is abundant; and in the fields on the plain above, Targionia latifolia. In a rocky sandy bit of wood in the way, the Trigonella also occurs, but less abundantly than in the station before noticed: Medicago orbicularis also occurs in the same place. Fedia coronata is most abundant on a sandy point overhanging the rail-road: Oxalis stricta occurs in the lower grounds; Coronilla minima and Micropus erectus are common in this direction.

On the 29th I left Etampes and returned to Paris; and on the 2nd of July accompanied M. de Jussieu and his friends and pupils in a herborization in the forest of Montmorency.

The neighbourhood of Paris affords a number of stations for pleasant and profitable botanical excursions, in the radius of a few miles. The forests of Marly, St. Germain, Montmorency, Bondy and Senart, the woods of Meudon and Versailles, and still nearer, those of Boulogne and Vincennes, afford ample scope for botanical investigations. Sometimes a larger range is taken, and M. de Jussieu leads a party, once in the season, to Fontainebleau or Rambouillet. In the weekly excursions, the mass of pupils know little about Botany, but even in these parties there are generally some sensible men and good botanists, besides M. de Jussieu himself, and M. Decaisne. M. de Jussieu's method with his pupils is admirable. They bring him plants to name, and he adds to the name some little note about their characters, or the natural class to which they belong, or calls their attention to particular points of construction which may tend to elucidate these points.

We took the road by the *Fontaine*, and thus entered the forest, keeping afterwards rather to the left. There is a good deal of springy ground, which does not perhaps yield much water even in the spring, but which is sufficient to maintain a number of plants which delight in moisture, and Osmunda regalis and a variety of Carices are pretty widely diffused. We got Carex Mairii growing plentifully, mixed with C. flava; Polygala depressa seems also to like wet places. On emerging from this part of the forest we passed the village of Andilly, from a point above which we had a noble view over the valley of the Seine and the surrounding hills. On the top of this bluff the stones abound in the fossil seeds of Chara medicaginula. On ascending this point we turn to the left, between a corn-field and a branch of the forest: the former contains Arenaria segetalis. Beyond this we again find a considerable extent of wet ground, from which we descended to a dried-up pool, at the foot of which is the habitat of Stachys alpina. In this pool, or in one in the same neighbourhood, I recollect on a former occasion to have found Teucrium Scorodonia. We then turned up the little valley which forms a station for Asperula odorata, and one or two other plants more common with us than about Paris, and arrived at a house famous for its milk, and *fromage à la crême*, which is more like clotted cream than like cream cheese, and after passing the foot of another pool, take a path to the right, at a little distance above which, on the left, is some boggy ground, the station of a curious monstrosity of Erica Tetralix. The flower is small, and much less conspicuous than ordinary, and the style very prominent; but the wonderful part is the apparent conversion of the eight anthers into as many cells of a seed-vessel.

It may be supposed I did not neglect the Bois de Boulogne, but I hardly know what line to recommend to an English botanist. The wood is nearly flat, on a sandy soil, and for a Parisian botanist contains few rarities but such as are suspicious. An English one, however, may be gratified, especially if he visits it in May, with finding Convallaria Polygonatum and multiflora, Pulmonaria angustifolia, Melampyrum cristatum and Herniaria glabra; or later in the season, Coronilla varia and Veronica spicata. Perhaps the best line would be to enter by the gate at Passy, near to which, on the rubbish and broken ground occasioned by the new fortifications, M. Bourgeau has lately found abundance of Centaurea melitensis. After passing the fortifications, we may keep northward to a great carrefour, that is, in this instance, to a large open circle where a great many roads unite. A little to the north we find Thalictrum sylvaticum, also a discovery of M. Bourgeau's, and if not a species, it is a variety well worth notice. It is smaller than T. minus, and differs from that in the manner in which it spreads itself over the ground, forming an almost continued and even covering. We then turn to the west, to the gate of Longchamps, near which are Medicago orbicularis, Orobanche amethystea, &c., and passing the gate we descend to a gravel-pit, about which are Heliotropium europæum, and several other plants not uncommon in such situations about Paris. We re-enter the wood, and take the avenue of Grand Villiers, leading to the gate of Boulogne; then take the first turning to the left, and near the turning, and for some distance along the last-mentioned road, we find Potentilla pensylvanica, P. recta, Myagrum orientale and Brassica Cheiranthus: there is also a large variety of Thalictrum minus. We go out of the gate of Boulogne, and make our way at a little distance from the wood to the *Point du jour*. I did not at the time visit this locality, but have a recollection of being much interested there some years ago.

On the 10th of July I took the rail-road to Versailles, and walked to the *Etang du trou Salé*. My chief objects were Potentilla supina, Elatine alsinastrum, E. hexandra and Scirpus supinus, but I succeeded only with the first. The Etang du trou Salé is a pool made by damming up a trifling valley, and the permanent supply of water is very small, if any, yet a number of persons engaged in angling may serve as a proof that it is never quite dry. The sides are very nearly level, so that a fall of a few inches exposes a great extent of land overflowed in the winter. In this part grows the Potentilla, this year in great abundance, but in some years it is said to be very sparingly scattered. Here also is Gypsophila muralis, and an Alopecurus that is called fulvus, but which I think does not differ from A. bulbosus. Some of the plants have a decided swelling at the base of the stalk, others are as decidedly without it, and between these there is every possible step. A little higher up we find Lythrum hyssopifolium, and on the edge of the water, Littorella lacustris, Limosella aquatica and Scirpus acicularis. For Scirpus supinus I am probably too early, as I believe it hardly flowers before September.

On the 14th I again accompanied M. de Jussieu and his pupils: M. Delile and his son, and M. Maire, were also of the party. We went on the rail-road to Athys, where we crossed the water, traversed a cultivated plain, and afterwards followed a little stream to its source in the forest of Senart. There is a good deal of boggy ground in this forest, where the face of the country seems to give little expectation of such a feature. Our plants were Exacum Candollii and filiforme, Juncus tenageya, Centunculus minimus and Potamogeton heterophyllus, all near the Carrefour des Cerfs. Epipactis palustris and Chlora perfoliata, abundant on the boggy ground. Utricularia minor, Inula salicina, Campanula cervicaria, Malva Alcea, Peucedanum parisiense, Selinum caruifolium, Stachys germanica, Polycnemum arvense, Stellera passerina, and Carex intermedia, the latter growing in the water, and putting on an appearance different from that which it has with us.

We concluded our walk at Ris, where we again got on to a rail-road train, and reached Paris about 6 o'clock.

On looking back at the course I have held, I must acknowledge that my turning south at Mantes before reaching Paris was not well planned in point of Botany, though a view of the cathedral at Chartres might be well worth such a deviation. A better way would be to stop at Vernon. There is a little valley above Vernon where perhaps something might be found, but the acknowledged spot of good Botany in on the hill of St. Catherine, on the opposite side of the Seine. From Vernon, descend in the steam-packet to the lesser Andelys, where the Rochers de St. Jacques on one side of the town, and Chateau Gaillard on the other, give probably the richest harvest on the river from Paris to the sea. A person who is not nice in his demands for accommodation, may be well entertained at the Chaine d'Or, at the little Andelys. The larger would probably afford a larger inn. From Andelys the botanist may again descend the Seine to the station which communicates with Louviers. He would then have to pass twice on the rail-road the distance from that station to Vernon, but this would cost less time than to ascend the stream between the two places. If after this he is inclined to stop at Mantes, he will find the best Botany on the hills on the north side of the river.

JOSEPH WOODS.

November, 1843.

ART. CXCVI.—*Varieties.*

433. *Observations on Hieracium nigrescens and H. hypochœroides.* In the last number (Phytol. 801), Mr. H. Watson has called attention to the plant which has been lately considered by English botanists as the Hieracium nigrescens (*Willd.*), and for my knowledge of which as a native of Scotland I am indebted to his kindness. A specimen now before me (gathered by Mr. Watson on Ben Aulder) agrees exactly with Bohemian specimens of H. nigrescens received from Mr. Tausch under that name; and as specimens from that botanist are expressly referred to as representing the plant of Willdenow's herbarium by Mr. Frœlich (DeCand. Prod. vii. 209), the latest general writer on the subject, I feel myself at liberty to consider that the Bohemian specimens are authentic representations of the plant of Willdenow. In addition to this the Scottish plant agrees well with the descriptions of H. nigrescens given by different authors, some of whom consider it as a distinct species, and others refer it, as an extreme form, to H. alpinum. Having now shown, I trust, sufficient reason for its name, I proceed to make a few observations upon its claims to specific distinction. This is a subject upon which much difference of opinion exists, since some forms of H. alpinum (*H. Halleri*) approach very closely to it; and it is only by long-continued cultivation, from seed, of this and H. Halleri, that we can expect to arrive at a determinate opinion upon the subject. I am unable to add anything to the character pointed out by Mr. Watson, as distinguishing this plant from all the forms of H. alpinum, namely, the much broader and more strongly toothed leaves and the dark or nearly black involucre. The difference of the colour

of the involucre seems to depend upon the comparative shortness of the hairs with which it is clothed; they are terminated by a pale portion as in H. alpinum, but that part is very short, thus allowing their lower part, which is black, to be much more distinctly seen. These peculiar hairs will enable the plant to be distinguished from all forms of H. murorum; and in those specimens which produce more than one flower, the very acute angle between the peduncles is a certain character. I do not venture to give any strong opinion upon the specific claims of this plant, but am strongly inclined to think it distinct from H. alpinum. I hope now to be allowed to say a few words on the second plant referred to by Mr. Watson. During a visit to the West Riding of Yorkshire in July last, I was shown by Mr. John Tatham, jun., the plant that has for many years been called Hypochœris maculata by the botanists of that neighbourhood, growing upon rocks near Settle, and had no hesitation in calling it a form of Hieracium murorum. I have now re-examined specimens from that place, and am fully confirmed in my opinion. I consider Mr. S. Gibson's H. hypochœroides to be the same plant. This is far from being an uncommon plant, and is very often taken for the H. maculatum (*Sm.*) or H. pulmonarium (*Sm.*), to which it is very closely allied, or the H. pictum of authors. H. maculatum is, according to my view, a much larger plant, with several stem-leaves, having a decurrent base to all the leaves, thus referring it to H. sylvaticum. The plant called H. pictum from the falls of the Ogwen is the H. rigidum, γ. *pictum* of my Manual (p. 186), and quite distinct from all the forms of H. murorum or H. sylvaticum; I possess it from Wastwater, Cumberland; Falls of the Ogwen, and near Llanberis, Caernarvonshire; and from near Thorngrafton, Northumberland. — *C. C. Babington; St. John's College, Cambridge, December,* 1843.

434. *Note on the Weymouth Stations of Lathyrus Nissolia and Salicornia radicans.* In reference to Mr. Gibson's remarks on the plants of Weymouth (Phytol. 735), and the Rev. A. Bloxam's note (Id. 775) on the same subject, it may be worth mentioning that I was at Weymouth in 1837, immediately after Mr. Bloxam's visit, when I found Lathyrus Nissolia growing abundantly to the west of Portland Ferry, and Salicornia radicans, also abundantly, on the ground newly reclaimed from the Backwater.—*T. Bell Salter; Ryde, December,* 1843.

435. *Note on the Hieraciums.* You will perhaps allow me to thank Mr. Watson for his information on the subject of the Hieracium (Phytol. 801), Mr. Watson's remarks are very clear and satisfactory, and there is little doubt of the plant sent by Mr. Tatham "to the Botani-

cal Society of London," being the same as the one I alluded to (Phytol. 741), and there is no doubt of Mr. Tatham's having been led into the error by some of the botanical works alluded to by Mr. Watson; but after this I would say that the plant sent by Mr. Tatham to that Society, was neither the H. pulmonarium nor the H. maculatum of Smith; the latter plant does certainly grow about Malham-cove, and in cultivation remains perfectly unchanged; this is the H. maculatum of our gardens, and if it be not a distinct species, it will be a variety of H. sylvaticum, *Smith*. It differs from the one which has been mistaken for Hypochœris maculata, in having its stem leafy, and in having more numerous flowers. In all the specimens which I have seen of the other plants, the stems are *without leaves*, and as I have said (Phytol. 741), the plant is not described by any writer on British plants.—*Samuel Gibson; Hebden Bridge, December* 9, 1843.

436. *Note on Carex pseudo-paradoxa.* I am sorry to be so much at variance with Dr. Wood, in respect to several of his remarks on my Carex pseudo-paradoxa, I do not understand what is meant by his saying, "and considering myself in some degree obliged to maintain the correctness of the Flora of this neighbourhood," unless he would say that I have stated something relating to the Manchester Flora which is not correct; and this I have not done, neither do I wish to do it. It appears that the Dr. and myself differ in our opinions as to how far Carex teretiuscula and my C. pseudo-paradoxa may or may not be considered distinct as species. Here I might ask what number of parts, and which of them, shall be looked upon as characteristic? But as that question has so often been asked, and no one can answer it, I will leave it as it is, and turn to the Dr., who has not noticed many particular parts of my C. pseudo-paradoxa, and those he has noticed will go to prove that it is a very different plant from C. teretiuscula. I did not notice the roots of my plant in the description which I gave of it (Phytol. 778), although I had been previously informed of its singular mode of growth; this I declined, as I did not wish to describe anything which I had not seen myself. The roots are the first which the Dr. takes notice of; he tells us that C. teretiuscula has a distinct mode of growth, and on the contrary that C. paniculata has roots which form dense and elevated *cæspites:* he then says, "so far as my observations extend, this difference in the roots is permanent." After this he tells us that my C. pseudo-paradoxa, in the place where it is found, "has not the opportunity of displaying its characteristic property of isolation, and is compelled to increase by a regular approximation and aggregation of its roots." He also

says that "as we approach the water, however, it begins to separate itself into masses of various sizes, and in this manner assumes a pseudo-cæspitose appearance." This is, I think, carrying the thing too far; first to tell us that the character of a plant is *permanent*, and then in the very next sentence to tell us how this *permanent* character can be changed. Here I must beg of the Dr. to stand on even ground, as I shall allow him nothing for supposition, unless he would allow me to suppose that the roots of my C. pseudo-paradoxa might be the roots of C. paniculata, in a modified form. This calls to memory the story of the *oat* being so much modified as to become *rye.* The next thing the Dr. takes notice of, is "its elongate and slender stems, and its more racemose mode of inflorescence:" this, he says, led him and the friend who was with him to suspect it might possibly be something *new* to them. There is nothing here but what will go to prove my plant to be very different from C. teretiuscula. The Dr. says that the plant has a more *racemose* mode of inflorescence; our editor tells us it has a *spike* — panicle he cannot call it. Now I will see what characters it must have to be a spike, &c. If it be a spike, the sessile or nearly sessile flowers are borne immediately upon an axis. Is our plant so?—*No.* If it be a *panicle*, the flowers are borne upon peduncles, which are variously branched, and seated upon an axis. Is our plant so?—*No.* If it be a *raceme*, the flowers are borne upon pedicels, which are generally single-flowered, and these again upon an axis. Is our plant so? — *No.* If it be a *thyrse*, the flowers are in a panicle which is very closely compacted, so as to form an oval head. Is our plant so? — *Yes.* The specimens now before me have their inflorescence composed of about six spikelets, two or three of the lower [ones] are again divided into about five or six spicula. This I called a *panicled spike* (Phytol. 778), and this perhaps would be a better term, as thyrse is not in common use. The next part of the plant which is taken notice of by the Dr. is the *fruit.* Here I have to enquire what the Dr. means us to understand by the *fruit?* For Sir W. Hooker, in describing the fruit of our Carices, takes notice of nothing more than the *perigynium.* Sir J. E. Smith makes a distinction between the fruit and the seed; when he speaks of the perigynium he calls it the fruit, when he speaks of the nut, he calls it the seed. When Mr. Babington speaks of the fruit of a Carex, he means to be understood as speaking of the perigynium and nut together; and when he speaks of them separately, he expresses it as such. When I speak of the fruit of a Carex, I speak of the *nut only*, as I do not consider the perigynium any part of the fruit. If the Dr. is to be understood as meaning the perigynium only, he is correct, but if when he speaks of the fruit, we are to understand the nut and perigynium separately, he is not correct when he says it "hardly, if at all, differs from that of Carex teretiuscula," as the nuts in these two Carices are very different, and will be found as I have described them (Phytol. 778), although the perigynia of the two are much alike, and this I have made no attempt to deny. Here again I find the Dr. obliged to admit that my plant puts on a different *aspect* and *habit*, he says it does this under the adventitious circumstances in which it grows. A little lower I find him talking of a *modified form*: modifications and changes will not do. I must again caution the Dr. to keep in a direct road, for if he goes to one side I shall go to the other. But this I will leave, and the next thing I shall notice is a modification of the following words: "as a form of C. teretiuscula *with fruit as in paniculata*," (Phytol. 778). These words I find so much modified as to stand as follows: —"a form of C. teretiuscula *with the fruit of C. paniculata*." There are two or three other things I might have noticed, but as I am now taking up too much of your space, I must beg of you to allow me to notice another (and perhaps the most important) point, and that is the *secrecy*. The Dr. says that "no such thing as secrecy has been shown at all," and that I was *never* refused to have the place made known to me. Here I cannot well make use of names, as the parties might not allow it; but I will tell the Dr., that the individual he alludes to, after telling me he was not at liberty to go, did refuse to make the place known to me. The refusal was made on the ground of its being nine miles from Manchester (I had been previously told it was three miles), and that if I were to go, I could not find the place. The Dr. further says that I did not apply *to any one else*; this I will say is not the case, as I made application, both by letter and otherwise. I was about two hours with a person who knows where the plant grows, and I tried every artifice I could to induce him either to go with me to the place, or otherwise to procure me specimens; but this was all to no purpose, and when I found that I could not procure them in a straightforward way, I resolved to go a little about for them. And I will now tell the Dr. that the person whom he employs at times to collect plants for him, did receive 5s. for going to fetch the specimens which I have now before me. I should have had to offer a few remarks on our Editor's note, but will prefer waiting the result of his renewed examination, and for the present leave the subject.—*Id.*

437. *Note on an apparently new British Carex.* I have much pleasure in announcing, through the medium of 'The Phytologist,'

the discovery (by Saml. Hailstone, Esq., F.L.S., of Horton Hall, near Bradford) of a Carex which appears to me not to be described by any writer on British plants. For this Carex I will propose the following name, and give a short description of it: but if it prove to be already described by continental botanists, under any other name, the one I have adopted will, of course, be given up. CAREX *Hailstoni* (Mihi). Stem about 18 inches high, three-angled, angles rough in the upper part, smooth below. Leaves flat, sheathing the base of the stem, tapering at the point and rough on the edges. Spike 2½ inches long, composed of about five alternate elongated spikelets, the lowermost of which is subtended by a bractea, which is somewhat longer than the spike: spikelets about an inch long, composed of about nine or ten spicula, these again are composed of about nine or ten *staminiferous* flowers: glumes ovate-acuminate, brown, with membranous edges. The roots and fertile flowers are unknown to me; perhaps the plant will be found to be a *diœcious* one, as I have not been able to find a single fertile flower in any of the specimens. Locality, "In a bog in the meadow on the left hand of Ore lane, proceeding from Hastings. In the spring of the year 1834." This plant is perhaps still to be found in the same locality, and would be well worth the trouble of being looked for by any botanist who may at any time be in search of plants in the neighbourhood of Hastings. This Carex is a very conspicuous one, and would soon be seen by any person who is acquainted with the genus. It is now nine years since Mr. Hailstone discovered the plant; and he says in his letter to me, that he had kept it in his herbarium separate and apart, as not being described by any author that he was aware of, as an English plant.—*Id.**

438. *Erratum.* Perhaps you will allow me to correct a little error which appears in your last (Phytol. 815); in the last line of that page read ***neuter*** spikelets instead of *outer* spikelets.—*Id.*

439. *Habitat for Cynodon Dactylon.* For the use of the youthful botanist resident in or near the great metropolis, to whom information of the whereabouts of any of the rarer species is a desideratum, I would mention that of Cynodon Dactylon, which I have seen in some abundance in the month of August, on Kew Green, Surrey. This, if I

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* To the above communications Mr. Gibson appends the following — " P.S. Do not omit any part of the above note." We have however taken the liberty to omit an entire paragraph, in which no allusion is made to the Carices in question: the remainder of Mr. Gibson's letter is printed verbatim.—*Ed.*

mistake not, is an unpublished station for this beautiful little grass.—*Walter Hill; Kew, December* 14, 1843.

440. *Note on the genus Sphagnum.* The genus Sphagnum, which occupies such an important position in the economy of Nature, does not latterly appear to have received, in this country, the same degree of attention which is bestowed on many other genera of mosses. Perhaps Sir W. J. Hooker's remark in the 'English Flora,' has dissuaded many persons from attempting to discriminate the species; "as it is certain," he says, "that the limits of the species, if such they may be called, cannot be defined." The four species given in that work are sufficiently well marked in character, and if no other forms were to be met with, would be easily distinguished; but the fact is, we have other forms, apparently quite as distinct, and fully as worthy of a name. If I am correct in this statement — and I think no one will deny it — we must come to the conclusion either, like Linnæus, to reduce all to but one species, or to add a few to the existing number. At the present time, when there is so general a disposition to multiply species, the former alternative is not very practicable, however reasonable it might be considered by some; even if it were attempted, it could not stand the test of *facts*, seeing that several of the admitted species may often be found growing intermixed, one with another, without losing their identity. Nevertheless, to add a few species to the present number, is by no means an easy task; for before that can be effected, the genus, in all its forms, must be carefully studied, in order to determine whether *any* characters may be relied on as permanent, and if so, in what they consist. By way of illustrating my views, I enclose for your inspection two specimens; one, which I believe to Sphagnum obtusifolium, var. *γ. fluitans,* I found floating in water in Bulwell bog, Notts. The fruit is situated about the middle of the stem, which circumstance, if the plant is to be considered a variety of S. obtusifolium, will entirely neutralize any characters that might be drawn from lateral and terminal fruit. The other specimen I cannot refer to any species whatever. I found it abundantly in fruit on Oxton bog, Notts., together with S. cuspidatum and S. compactum (*Bridel*), the latter as mentioned by Dr. Howitt, in his Flora of the county. Hoping that these remarks may gain for the subject the attention of persons who will be able to give more definite information, I conclude with enquiring whether any of your correspondents can tell me what is meant by Sphagnum palustre, so often referred to in geological books and lectures? —*Joseph Sidebotham; Manchester, December* 21, 1843.

441. *Note on Veronica Buxbaumii.* I have noticed Veronica Buxbaumii for several years past, growing in great profusion in a hop-plantation in this neighbourhood: although it is frequently disturbed by the tillage of the soil, it appears to be as firmly established as ever, and has now as much the appearance of being a true native as its two allies, V. polita and agrestis. — *Thomas Bentall; Halstead, Essex, January* 4, 1844.

442. *Note on the late flowering of the Fuchsia.* The extraordinary mildness of the closing months of last year has been universally remarked; and the daily and weekly papers, in noticing this peculiarity of the season, have more than once called the attention of their readers to such wonders as "roses blossoming," "young potatoes of the size of marbles," &c.; in addition, I may mention the following instance of a Fuchsia having renewed its youth, and strangely budded and blossomed about a week ago. The plant is kept in a flower-pot. During last summer it blossomed in its season, like other plants. In autumn its foliage withered and fell, and the plant reminded us of the approach of winter. But winter never came; and the Fuchsia, as if hopeless of his approach, began to bud and finally to blossom. At present it is clothed with leaves, — but leaves, not one of which is a third the size of its summer leaves. Its flowers, too, are curious. The corolla — small in any case, in this unnaturally so — retains its deep purple hue; but the beautifully developed calyx, instead of being bright scarlet, as it ought, is of a pale pink colour — almost white. — *Robert Dick Duncan; Vale of Almond, Mid Calder, Edinburghshire, January* 6, 1844.

443. *Note on Polypodium fragrans.* In reference to the question respecting Polypodium fragrans (Phytol. 839), perhaps I may venture to ask Mr. Newman whether, in "collecting evidence," he has been reminded of an observation made by Rousseau, in his 'Lettres sur la Botanique.' I have not this work to refer to, but an extract taken from it a few years ago, is as follows. "Je crois me rappeler, par exemple, qu' il s'y trouve quelques fougères, entre autres le Polypodium fragrans, que j'ai herborisées en Angleterre, et qui ne sont pas communes partout." There is no reference to the number of the letter, but I believe it to be one towards the end of the volume. Rousseau's residence, while in this country, was at Wootton-hall, Staffordshire, a neighbourhood in which it is highly probable Lastræa Oreopteris would be found: and it was with a view of ascertaining this that the extract was made: and my attention was attracted to the subject, by a note in the 7th edition of Withering's Botany, in which the editor,

after describing L. Oreopteris, says, "the fragrant scent of this species is supposed to have induced Hudson to imagine it the P. fragrans of Linnæus."—*M. Beever; Coniston, January* 4, 1844.

444. *Note on Polypodium fragrans.* In 'The Phytologist' for the present month (Phytol. 839), Mr. Newman puts the following question,— "What is the Polypodium fragrans of Linneus?" stating, at the same time, that Wahlenberg, Roth, DeCandolle, Sadler, Smith, Hooker, Dietrich and Babington appear to take no notice of it. Reference to Hooker and Greville's 'Icones Filicum' will prove that Mr. Newman is in error in supposing Sir Wm. Hooker to have omitted mention of this fern, as in vol. i. tab. 70, it is represented under the name of Nephrodium fragrans (Polypodium fragrans, *Linn.*, being given as a synonyme), from specimens collected by Capt. Parry in the Island of Igloolik, during one of his expeditions to the Arctic regions. I have in my herbarium a specimen presented by Miss A. E. Griffiths, gathered by her brother, William Griffiths, Esq. (who accompanied Capt. Parry) in Melville Island, which, though not so large, would yet be immediately detected as the same species. It appears also that Sir W. Hooker has described P. fragrans, *L.* in the Appendix to Parry's Second Voyage, and that Swartz, Willdenow, Sprengel and Richardson have noticed it. The object of Mr. Newman in putting this question, appears to be a wish to identify the Polypodium fragrans, *Lin.*, with either the Aspidium Oreopteris, *Sw.*, or the Aspidium rigidum, *Schkuhr,* and thus to apply the Linnæan name to one of our indigenous species. It is true that Hudson adopts this name, but not having a copy of his work, I cannot quote his characters, and hazard an opinion of my own as to their application. This however is of little consequence, as Sir J. E. Smith, in his 'English Flora,' gives Hudson's P. fragrans, with a note of interrogation, as a synonyme of Asp. Oreopteris, *Sw.*, and says that this latter plant "exhales, more or less constantly, a fragrant scent, whence perhaps Mr. Hudson might take it for Polypodium fragrans of Linnæus, which is a very distinct North-American species." If we refer to the description of P. fragrans, *L.*, as given in the 'Systema Naturæ,' we shall find it to be as follows. "P. frondibus subbipinnatis lanceolatis: foliolis confertis: lobis obtusis serratis, stipite paleaceo." Aspidium Oreopteris, *Sw.*, will most certainly not answer to these characters, it being, according to Mr. Newman in his beautiful work on British Ferns, "pinnate, the pinnæ *rather distant* and pinnatifid, the pinnules rounded and slightly crenate;" so slightly crenate indeed, that the figures represent the pinnulæ as scarcely undulate. The question then becomes

narrowed to the Nephrodium fragrans of Hooker and Greville's 'Icones' and the Lastræa rigida of English botanists. Now to the first of these the Linnæan description alone strictly applies, both as to the form of the frond, "*lanceolate*," and the heaping together, "confertæ," of the pinnæ. Swartz describes the frond of L. rigida as ovato-lanceolate, which quite agrees with my specimens of the plant from Yorkshire and Lancashire : the pinnæ also are not closer than in the great mass of bipinnate Lastræa. I would here remark that in the section of Polypodium in which P. fragrans is described in the 'Systema Naturæ,' the term "confertæ" is not employed, except with reference to the pinnæ of P. fragrans. These comparisons are, in my opinion, sufficient to prove that Linnæus applied the specific name of "fragrans" to the fern which is figured in the 'Icones Filicum' as Nephrodium fragrans. It is indeed true that difference of soil and temperature might produce such a change, as to cause both an approximation of all the pinnæ, and a shortening of the lower ones, so as to make the fronds of Aspidium rigidum, *Sw.*, correspond to two of the Linnæan characters, (as I have observed in Asplenium lanceolatum, *Sw.*) ; but I think we have no right to assume that the great founder of Systematic Botany took his description from an aberrant form, when we have a species whose normal characteristics so well agree with those given in the 'Systema Naturæ.' That Lastræa rigida and Lastræa fragrans are distinct types of the same species, no one who has compared the plants, side by side, will, I am confident, be inclined to admit : — the elongated acute triangular pinnæ of the former can never be converted into the oblong obtuse ones of the latter. An examination of the specimens of Polypodium fragrans, in the Linnæan herbarium would perhaps settle the question ; and I would therefore advise Mr. Newman to avail himself of his means of access to the said collection, in order to obtain as much information as possible upon the subject. If these specimens agree with the Linnæan description, all doubt will be removed : if not, we must conclude that through mistake they have found their way into the collection, and we must consequently revert to the published characters. I am inclined to agree in the spirit of Reichenbach's observation, though not to participate in the sneer on the value of the Linnæan herbarium, when he says, "Opera viri magni *mundo communia* sunt, herbarium fallax *unico* possessore gaudet."—*W. S. Hore, M.A.; Stoke, Devonport, Jan.* 9, 1844.

445. *Note on the Polypodium fragrans of Hudson.* The Polypodium fragrans of Hudson (quære Linn.) seems to be considered as a mere *nominis umbra* by all modern writers on ferns ; and yet there is

satisfactory evidence that such a plant did formerly exist. Sprengel, in his work on the Cryptogamia (Kœnig's translation) thus characterizes the species. *Aspidium fragrans.* With bipinnate frond, the primary leaflets ovate-lanceolate, the secondary very narrow, sharp-toothed, and their lower surface thickly clothed with scales, and with the involucres of the spots of the capsules. The stem about one foot long is closely beset with broad chaffy scales. Now Sprengel was acquainted with this species from *specimens,* which he states he received from Aiton, who observed it was a native of England. A plant answering to the description did then *exist* at the time, and most probably in the Kew garden, although it is not introduced into the 'Hortus Kewensis.' Sprengel could not have confounded this fern with Aspidium (Lastræa) rigidum, which he describes in the work from which this description is taken, and much less with Aspidium Oreopteris, for he expressly censures Bolton for considering Hudson's P. fragrans as identical with his (Bolton's) Polypodium Thelypteris (Asp. Oreopteris). The last species smells exactly like orange-peel, whilst Sprengel's Asp. fragrans is stated to smell like raspberries, and to be a Siberian as well as British species. — *Henry Oxley Stephens;* 78, *Old Market Street, Bristol, January* 12, 1844.

446. *Note on Cystopteris montana.* Cystopteris montana, recently described in 'The Phytologist' as a newly-discovered British plant, (Phytol. 671), is stated by Sprengel to have been found in Wales by Plukenet, who figured it in his 'Phytographia,' tab. 89, fig. 4, but I have not seen the figure.—*Id.*

ART. CXCVII. — *Proceedings of Societies.*

BOTANICAL SOCIETY OF LONDON.

November 17, 1843.—J. E. Gray, Esq., F.R.S., President, in the Chair.

Dr. Bromfield presented a specimen of a species of Calamintha, new to the British Flora, discovered by him in the Isle of Wight, (Phytol. 768).

Read "Notes of a Botanical Excursion in Warwickshire, Worcestershire, Wales, and Ireland," by Mr. S. P. Woodward. The first week, spent by Mr. Woodward in Worcestershire, afforded him very little scope for botanizing, the interest of the country being chiefly geological. The only ferns met with near Birmingham, were Athyrium Filix-femina and Lastræa dilatata, on the borders of Edgbaston pond; and in the vicinity of Kidderminster Mr. W. could not find even these. On the Clint hills Malva moschata and Campanula patula were the only conspicuous flowers in the hedgerows. These hills are of trap rock, but as they present no escarpments, and have no rills or ponds, they are entirely destitute of ferns. The limestone hills of Dudley-castle and the Wren's nest, appear to be in the same predicament, not even the Polypody grows there, and on the old castle one solitary bit of Ruta-muraria was all Mr. W. could discover: Cnicus eriophorus is very abundant about the castle. Lastræa dilatata grows amongst the furze on the Rubury hill, which is a ridge of altered Caradoc sandstone flanking the Bromsgrove Lickey. The Abberley hills present more variety of soil and aspect, and consequently afford better botanizing ground. At a spring-head near Abberley church, Oreopteris and Filix-femina are in tolerable abundance; the brake is plentiful on the hills, and in a hedge near the Hundred-house, Polypodium vulgare and Polystichum angulare occur sparingly. Lastræa spinulosa grows near Great Witley, and Equisetum Telmateia is plentiful in a quarry within sight of the Hundred-house, conspicuous on account of its vertical beds of limestone.

Near Malvern, Lastræa dilatata and Equisetum sylvaticum abound in the woods, and Polystichum angulare on the banks of small ravines in the Wenlock shale. Pteris and Lomaria are also on the high ground, and Ceterach on the church. The Malvern hills are a range of trap rock, from 6 to 14,000 feet in height, and on their eastern flank which is least exposed to wind and sun and covered in many places with a talus of fallen fragments of rock, there is excellent accommodation for ferns. Polypodium vulgare, Lastræa dilatata and Filix-mas, Athyrium Filix-femina, Asplenium Trichomanes and Adiantum-nigrum are abundant, some of them very nearly to the summit of the hills. The principal flowers in the thickets were Campanula Trachelium, Vicia sylvatica, Chlora perfoliata, and the betony and foxglove; and upon the stone walls, Cotyledon and Cardamine Impatiens. Mr. W. gathered Asplenium Trichomanes again on the walls of the Cathedral-precinct at Gloucester, and on the walls and bridge near Crickhowell and Brecon, Ruta-muraria and Ceterach are abundant. Mr. W. believed these walls to be built with the limestone occurring in the middle of the old red sandstone series. Filix-femina is plentiful on the banks of the Wye and Towey. At Caermarthen Mr. W. saw Adiantum-nigrum and Trichomanes on many of the stone walls, and on the walls of Lord Dynevor's park near Llandeilo, the Polypody grew so luxuriantly as to make him very desirous of ascertaining whether it could be the Cambricum, which he had never seen or heard of growing except in gardens.

Passing over from Pembroke to Waterford, Dungarvan and Youghal, the aspect of the country is entirely changed. Instead of the rivers winding through rich corn-valleys and deep woods, one dreary expanse of grey rocks and purple heather is all that meets the eye often for many miles. Occasionally the country is intersected by deep glens, but they are seldom wooded; and both in the low boggy ground and on the hills, cultivation seems scarcely to produce any effect in softening the air of desolation spread all around. In the stone walls bordering the roads and separating the fields, Filix-mas and Filix-femina are everywhere seen; Scolopendrium, Pteris, Lomaria, and Lastræa dilatata are also very general. In the dry stony fields the brilliant spikes of Lythrum Salicaria seemed to have taken the place of the foxglove and nettle-bell of our English hedge-rows, and by its abundance and beauty attracted the attention and admiration of Mr. Woodward's fellow-travellers. At Glenbower near Youghal Hymenophyllum Tonbridgense grows most luxuriantly, and Trichomanes speciosum is also said to have been found. During his stay in Cork, Dr. Thos. Power took Mr. W. to see the habitat of the Trichomanes in the Temple-Michael glen, at the top of Glen-mire. There is very little of the plant, and it is not known to fructify. In this glen there is sometimes a low scanty growth of the "Irish oak," not nearly so conspicuous however as Euphorbia Hibernica, Bartsia viscosa and Gnaphalium rectum, and Carex pulicaris grows in the glen and its vicinity; and here Mr. W. first met with Lastræa dumetorum growing along with L. dilatata, and presenting its usually very distinct appearance. Hymenophyllum grows scantily in this glen, and from exposure is all dried up by the beginning of autumn. The other ferns noticed near Cork were Scolopendrium, Asplenium Ruta-muraria, Trichomanes and Adiantum-nigrum, Lastræa Filix-mas, Athyrium Filix-femina, Polypodium vulgare, Lomaria spicant and Polystichum aculeatum.

From Cork Mr. W. took the mail to Bantry, passing through Bandon, about four miles from which Trichomanes speciosum grows more strongly than near Cork, but still is always barren. About Bandon and Innishannon the Polypody grows abundantly on walls, attaining a very large size, and much of it, Mr. W. believed, would turn out to be proliferous. About the rocky roads and salmon-streams of this neighbourhood, the common Filix-mas and Filix-femina grew more luxuriantly than Mr. W. had ever seen elsewhere.

Further on, at Clonakilty, Erica vagans and Mackaii are said to grow. Between Skibbereen and Bantry, and indeed in all the mountainous parts of Cork and Kerry, Lomaria spicant is the most abundant of ferns.

At Bantry Mr. W. took Mr. Newman' Irish Notes in his hand, and strolled out to see Lord Bearhaven's seat and park. The Irish variety of the Polypody was found growing as described, on the park-wall; and on ascending the hill from which Mr. N. watched the sunset over the bay, with its bright islands and mountain coast, he startled a flock of curlews from their daily resting-place, which is usually occupied at night by the rooks and jackdaws. In a belt of plantation below this hill there is abundance of Polystichum angulare, Lastræa Filix-mas and dilatata, Athyrium Filix-femina and Lomaria spicant; and the hill itself is half covered with Pteris, which does not usually abound, or attain its customary luxuriance in the south of Ireland. Following the example of Mr. Newman, Mr. W. took a boat and crossed the bay to Glengariff; and the next day walked on to Kenmare, missing Hungry-hill and the Menziesia polifolia, as he was anxious to spend a day with Dr. Taylor at Dunkerran castle. In Glengariff he found both species of Hymenophyllum, a profusion of Osmunda, Lastræa dilatata and dumetorum, Lomaria, Filix-femina, Pteris and Polypody, but no Trichomanes, although several botanists have tried to introduce it there. There are fine woods of birch, hawthorn, Arbutus, &c, around the hotel of Glengariff; and the hills around are covered with peat to their summits, so as to render the new mountain road with its tunnel far from unwelcome. The rocks by the road-side were everywhere covered with Polytrichum urnigerum in fructification; and Saxifrages and Sedums were all out of fruit. Much of the grass on the rocks (Festuca ovina?) is viviparous; but except the blue Jasione and Erica Tetralix, there were few flowers remaining even in the beginning of August. Mosses, Jungermannias and Lichens abound everywhere. Dr. Taylor named the following:—

Trichostomum polyphyllum and fasciculare. Rocks.
——— lanuginosum. Mountain.
Entosthodon Templetoni. Rocky streams.
Hypnum flagellare, brevirostre. Woods.
Hypnum ruscifolium. Rills and springs.
Polytrichum commune, gracile, aloides, juniperinum. Rocks.
Weissia heteromalla. Ditto.
Dicranum flexuosum. Mountains.

Usnea florida, Parmelia caperata, Sphærophoron compressum, Scyphophorus pyxidatus, Cenomyce uncialis, Jungermannia nemorosa, cochleariformis, albicans, Taylori and tomentella.

In company with Dr. Taylor, Mr. W. went to Blackwater-bridge, which is a famous cryptogamic garden of Dr. T.'s; and there he pointed out species innumerable of Jungermannia, Marchantia, Sticta, Hypnnm, Hookeria, Pterogonium, Bryum &c

The stream runs through a wooded glen, the rocks of which are everywhere overgrown with mosses and ferns, Hymenophyllum, Asplenium Trichomanes and Adiantum-nigrum, Lastræa dilatata, Scolopendrium, Filix-femina &c. Euphorbia Hiberna was in fruit, Bartsia viscosa in full flower in the fields, Hieracium Taylori &c., and in the hedges round Dr. Taylor's garden, Dunkerron, Lastræa spinulosa was found, the only spot in Kerry where Mr. W. met with it. On Dunkerron mountain Dr. Taylor finds Lastræa dumetorum, and an Equisetum, which is in Mr. Newman's hands to be named.

Every one who has been at Killarney will be rejoiced to escape the infliction of a description, and to those who have not yet visited its famous lakes and water-falls and the bays of the neighbouring coast, no description would give any adequate idea. Mr. W. was not particularly successful in finding ferns, his attention being constantly occupied by the novelty and grandeur of the views, and the multitude of other objects equally interesting. The following list must stand in the place of an account of the excursions which hundreds of visitors yearly take, and almost as many have written about.

Trichomanes speciosum. Torc cascade.

Hymenophyllum Tonbridgense and Wilsoni. All the waterfalls.

Polypodium vulgare, v. *serratum*. Woods. The Irish var. Muckruss abbey.

Scolopendrium vulgare and Ceterach officinarum. Muckruss demesne.

Osmunda regalis. Lakes.

Asplenium Adiantum-nigrum. Var. β. Gap of Dunloe.

——— Trichomanes, var.

——— viride. Mangarton.

——— Ruta-muraria. Walls, Cloghereen.

——— marinum, (Newman).

Lastræa dilatata. Woods.

——— dumetorum. Woods, plentiful.

——— Oreopteris. Mangarton.

——— Filix-mas. Common.

Lomaria spicant. Abundant.

Polystichum angulare. Muckruss.

Lycopodium alpinum and Selago. Mangarton.

Isoetes lacustris. All the lakes.

Equisetum elongatum. Muckruss.

Polypodium Phegopteris. Muckruss (Dr. Taylor).

——— Dryopteris and Lastræa Thelypteris. Muckruss (Mackay).

Mr. W. could not find Aspl. marinum. The plants in flower were: — Hypericum Androsæmum &c., Scutellaria minor, Achillæa Ptarmica, Euphrasia with purple flowers, Mangarton, Saxifraga umbrosa and stellaris, Orobanche minor, Muckruss abbey, Circæa Lutetiana, Lysimachia nemorum, Anagallis tenella, Veronica officinalis, Chamædrys and serpyllifolia, Lotus corniculatus, Epipactis latifolia, abundant, a few flowers remaining, Calluna vulgaris with white flowers.

Mr. Woodward afterwards visited Brandon hill, on the Dingle promontory, and gathered Polystichum Lonchitis and Cystopteris dentata in the clefts of the rocks near its summit; also Asplenium Adiantum-nigrum, Trichomanes and marinum, Athyrium Filix-femina, Polypodium vulgare, Hymenophyllum Wilsoni, Lastræa dilatata, dumetorum and Filix-mas, Osmunda regalis, Lomaria spicant and Pteris aquilina.

The plants in flower were Carex Œderi and pilulifera, which form great part of the herbage; Juncus squarrosus, Jasione perennis, Tormentilla, Polygala, Utricularia minor, the wild thyme, Rhinanthus, Oxyria, Pedicularis palustris, Scabiosa succisa, Ranunculus Flammula, Hypericum elodes very abundant, H. pulchrum, Saxifraga umbrosa in flower, S. Geum and hypnoides out of flower, Aira flexuosa, Agrostis vulgaris, Veronica serpyllifolia, Lythrum Salicaria, Lycopus europæus, Angelica sylvestris, Silene maritima, Statice Armeria (in flower on the summit of Brandon, 3150 feet above the sea), and Narthecium ossifragum, a few flowers of which still lingered. Pinguicula grandiflora, the leaves of which spread out in yellow stars over the ground in every part of Kerry, was entirely out of flower. Mr. W. was not at the time aware of Mr. Moore's discovery of the Trichomanes at Mount Eagle, and was unable to spare a day for the search after Adiantum at Cahir Conree or Sibthorpia at the Conner cliffs. Passing up the Shannon to Lough Derg, Mr. W. noticed Ceterach, Trichomanes and Ruta-muraria on the stone walls and bridges; after which his botanizing was confined to the College and Glasnevin Botanic Gardens at Dublin.

November 29, 1843.—Seventh Anniversary Meeting. J. Reynolds, Esq., Treasurer, in the chair.

From the Report of the Council it appeared that 13 new members had been elected since the last anniversary; and that the Society now consists of 159 members.

The Report of the Herbarium-committee was read, and stated that many interesting British plants had been presented, including several species of Carices collected by the late Mr. G. Don, which were presented by Mr. S. P. Woodward. Specimens of Carex paradoxa (*Willd.*), Borkhausia setosa (*DC.*), Neottia gemmipara, Convallaria bifolia, Statice rariflora, and other valuable plants, had been received. Mr. Edwin Lees had presented a collection of British Rubi, comprising nearly all the species.

Numerous interesting Irish plants had been received from Mr. W. Andrews, including many duplicates of Trichomanes speciosum.

Distribution of Duplicates. — The parcels of plants sent to the members in return for their contributions had given much satisfaction: and in nearly every instance the Committee were enabled to send the return parcel within a fortnight after the receipt of the contributor's own parcel.

Since the printing of the Catalogue of British Plants now used by the members in marking their desiderata, several new species have been added to the Flora of the country, which, of course, do not appear in the catalogue. As far as these novelties can be obtained, the Committee will distribute them through the parcels sent out to contributors, together with any other specimens which may afford the opportunity for correcting errors of nomenclature, or in any way elucidating the Botany of Britain. For the common benefit of members it is particularly requested that contributors will send as many duplicates as they can of all such novelties.

Among the specimens now ready for distribution are the following. A few specimens of Statice rariflora, obtained through the kindness of Mr. Notcutt; an ample supply of the true Crepis biennis, presented by the Rev. A. Bloxam; the true Primula elatior (*Jacq.*), received from Mr. E. Doubleday, together with the varieties of P. vulgaris, which are often mistaken for the former. The true Eriophoron gracile (*Koch*), known to very few English botanists before the summer of 1842. Linaria spartea, naturalized at Walton, in Surrey. Bromus commutatus (*Schrader*), so very frequently misnamed B. arvensis (*Linn.*) Varieties of Betula alba, which are described as species by several botanical authorities. Festuca loliacea passing into F. pratensis; Lolium multiflorum, &c.

Label-Book.—The original labels sent with specimens are carefully preserved, and those which are not required for introduction into the reference-herbarium along with the specimens, will be fastened into a book, as a permanent record of the localities in which the specimens have been collected.

Local Herbaria.—Dr. Ayres has sent a portion of the Flora of Thame, Oxfordshire, and engaged to complete it; and a full set of the flowering plants of Esher, in Surrey, has been collected, and will be sent to the Society as soon as they can be glued down to paper in the manner prescribed by the Committee. Other members are collecting the herbaria of their respective districts, and the Committee hope, next year, to report the addition of several local herbaria.

Foreign Plants. — The donations of foreign plants received during the past season far exceeds that of any former year. The Royal Horticultural Society of Cornwall has sent a very large collection of East-Indian plants, comprising specimens collected at Madras by Dr. Wight, and at Assam by Major Jenkins.

A very large collection of North-American plants had been received from Dr. Gavin Watson and Mr. R. Kilvington; and Mr. E. Doubleday had presented 300 species from Ohio. A collection of specimens from Western Australia has been presented by Mr. Turner; and Mr. Adam Gerard has sent some valuable plants collected at Sierra Leone.

Cryptogamic Collection, (Ferns). — British ferns have been received from various members; and in every instance where specimens have been received from localities not hitherto recorded in the collection, the most characteristic have been selected and introduced, in accordance with the principle laid down by the Committee, of extending the series to every locality that can be obtained for the rare species, and every county or district for the more abundant. It has also been made an object to ascertain the geological range of each, as well as its geographical distribution. The abundant supply of Lastræa cristata, Asplenium lanceolatum, Adiantum Capillus-Veneris, and Trichomanes speciosum, has enabled the Committee to distribute them to all members who applied for specimens.

Mosses, Lichens, Hepaticæ and Algæ.—The following species of mosses new to the British Flora, have been presented by Dr. Thomas Taylor: — Trichostomum saxatile (*Taylor*, *MS.*), and Bryum recurvifolium (*Taylor*, *MS.*); and the following new species of Hepaticæ: — Jungermannia reclusa, fragilifera, germana and riparia (all *Taylor*, *MSS.*): together with authentic specimens of the newly-determined species, — Dicranum scoparium and D. Dillenii (*Taylor*). Mr. G. H. K. Thwaites has sent a large collection of mosses, chiefly collected by him in the neighbourhood of Bristol, including many new species. Dr. Ayres has forwarded specimens of Peziza cautecaulis and Hystericum rubrum discovered by him in Oxfordshire.

In concluding their Report, the Committee called upon the members for renewed exertions to make the collection forming by the Society as complete as possible, and to render their herbarium a permanent standard for the determination of plants: and members and contributors are particularly requested to send monstrosities, and any specimens differing from the common form.

The Reports of the Council and Herbarium Committee were unanimously adopted; a ballot then took place for the Council for the ensuing year: when J. E. Gray, Esq., was re-elected President. John Miers, Esq., F.R.S., J. F. Young, M.D., and A. Henfrey, Esq., A.L.S., were elected new members of the Council in the room of G. Francis, Esq., H. A. Meeson, M.D., and Adam White, Esq., who retire from the Council in accordance with the rules of the Society.

Mr. J. Reynolds, Mr. G. E. Dennes, and Mr. T. Sansom, were respectively re-elected Treasurer, Secretary and Librarian.

December 13. — The President nominated Hewett C. Watson, Esq., F.L.S., and John Miers, Esq., F.R.S., Vice-Presidents. *G. E. D.*